

NEW SPECIES, NEW COMBINATIONS AND COMMENTS ON MEXICAN
VERBESINA (ASTERACEAE)

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In connection with a forthcoming treatment of the Asteraceae of Mexico (Turner and Nesom, in prep.) the following new species and combinations are deemed appropriate.

VERBESINA GUERREROANA B. L. Turner, sp. nov.

V. angustifoliae affinis sed capitulis multo parvioribus et foliis parvioribus venis manifeste elevatis differt.

Shrub 2.5 m high. Stems hispid-hirsutulous, brown, wingless. Leaves alternate, 5-8 cm long, 1-2 cm wide; petioles 1-3 mm long; blades oblanceolate to lanceolate-elliptic, tapering upon the petiole, hispidulous above and below, rough to the touch, markedly pinnately venose below with raised veins, the margins remotely serratulous. Heads small, subglobose, arranged apically in rather congested leafy corymbs, 5-8 cm across, 3-5 cm high. Involucre 2-3 mm high, imbricate, 2-3 seriate; bracts broadly ovate to oval, the inner series cuspidate with recurved apices. Receptacle broadly conical, ca 1.2 mm high, 1.5 mm across; chaff shorter than the florets, decidedly clavate, with broad, dark "shoulders" which bear an abrupt, sharply recurved, terminal cusp. Ray florets minute, 1-3, pistillate, fertile; corollas yellow, the ligules ca 1.5 mm long, 0.5 mm wide, the tube ca 0.75 mm long, coarsely hispidulous. Disk florets numerous; corollas yellow, 3-4 mm long, the tube ca 0.5 mm long. Achenes ca 3 mm long (including the minute pappus), ca 2 mm wide, with prominent membranous wings along the upper 1/3; pappus of 2 awns ca 0.5 mm long.

TYPE: MEXICO. GUERRERO: Petlacala, streamlet below house of Reyes, 1780 m, 16 Dec 1937, Ynes Mexia 8975 (holotype LL; isotypes GH, LL, US).

The species is known only from the type material and is noteworthy for its much-reduced, 2-3 seriate involucre, small heads and leaves with prominently raised reticulate venation. Because of its alternate leaves, wingless stems, reduced ligules, and pales with recurved cusps, it clearly relates to V. angustifolia Benth. (Blake) and will key to that species in Blake's (1961) treatment.

VERBESINA MACVAUGHII B. L. Turner, sp. nov.

V. angustifoliae affinis sed laminis abrupte petiolatis et capitulis multo parvioribus flosculis radii et disci numerosioribus differt.

Shrubs or robust perennial herbs 1-4 m high. Stems appressed hispid to glabrate, seemingly wingless or variously narrow winged, or merely auriculate at the base of petioles. Leaves opposite below, alternate above (rarely opposite throughout on secondary branches); petioles 1-3 mm long; blades 8-25 cm long, 1.5-4.5 cm wide, sparsely appressed hispid along the veins, otherwise glabrous, the margins irregularly finely serrulate. Heads 10-60 arranged in somewhat congested terminal corymbs, in flower mostly over-topped by the leaves, at anthesis the ultimate peduncles 3-10 mm long. Involucre small, 2-3 mm high, 2-4 mm wide; bracts 9-15, imbricate, glabrous or nearly so, grading into the chaff which are abruptly apiculate and scarcely recurved. Ray florets pistillate, yellow, mostly 1-3, rarely 4; ligules 3-4 mm long, ca 2 mm wide. Disk florets 15-30; corollas yellow, 2-3 mm long, the tube ca 0.6 mm long, pubescent, the lobes ca 0.5 mm long, glabrous. Anthers brown. Achene body ca 2.5 mm long, ca 1.3 mm wide, narrowly ciliate-winged; pappus of 2, readily deciduous, awns, 1.0-1.7 mm long.

TYPE: MEXICO. OAXACA: Steep mountainsides ca 80 km SSW of Sola de Vega on the seaward side of the pass 25 km above S. Gabriel Mixtepec, Mpio. de Juquila, in "transition from pine to deciduous forest with Pinus strobus", 1450-1700 m, 11 Feb 1965, R. McVaugh 22400 (holotype LL).

Additional Collections Examined: MEXICO. OAXACA: San Juan Luachao, 80.5 km N of Puerto Escondido, ca 1670 m, 22 Dec 1984, Cowan 4995 (MEXU, TEX); 3 km NW of San Jose del Pacifico, along the road to Puerto Angel, ca 2400 m, 8 Nov 1970, Cronquist & Fay 10891 (GH, TEX, US); 17 km NE of Piedra Larga, Mpio. de Juquila, ca 1260 m, 22 Nov 1982, E. Martinez S. et al. 2772 (MEXU, TEX).

According to label data (McVaugh 22400; Cowan 4995), Verbesina mcvaughii is a perennial herb 1-1.5 m high. Cronquist and Fay, however, describe it as a shrub 1-4 m high with leaves alternate to occasionally almost opposite. Indeed, Martinez describes the plant as an "arbusto", the specimen at my hand possessing opposite leaves throughout, these appearing on very slender secondary branches with unusually small heads.

Verbesina macvaughii clearly relates to V. angustifolia (Benth.) Blake, which also occurs in Oaxaca, but the latter has much larger heads with longer more numerous rays and the blades taper onto the petiole. The former is perhaps closer to V. culminicola McVaugh of Jalisco which is readily distinguished by its

peculiar spatulate outer involucre bracts which exceed those of the inner.

It is a pleasure to name this species for its first collector, Roger McVaugh, a truly monumental worker on Mexico Compositae and upon whose broad "shoulders" I have stood more than once.

VERBESINA MEXIAE B. L. Turner, sp. nov.

V. hypoglaucæ affinis sed flosculis radii pistillatis fertilibus, antheris fuscis, et involucre bracteis externis appressis brevioribus.

Shrub or small tree 1-3(6) m tall. Stems wingless, densely appressed white-pubescent, appearing ashy-white when young, tannish with age. Leaves opposite throughout, 5-16 cm long, 1-3 cm wide; petioles 1-3 mm long; blades narrowly oval to ovate-oval, pinnately veined, bicolored, densely canescent (ashy-white) below, moderately canescent and dark-green above, the margins entire to weakly serrulate. Heads narrowly campanulate, 15-50, in terminal rounded corymbs 5-15 cm across, 3-7 cm high, the ultimate peduncles mostly 3-15 mm long. Involucre imbricate, 2-3(4) seriate, the outer series appressed and much shorter than the inner; bracts 1-6 mm long, the inner usually dark (rarely yellowish) and somewhat viscid, acute. Receptacle hemispheric, pubescent, about 1.5 mm high and 1.5 mm across, the bracts linear with yellowish, erect apices. Ray florets (3)5-8, pistillate, fertile; ligules yellow, 6-10(12) mm long, 3-5 mm wide. Disk florets (15)20-45; corollas yellow, yellow-orange or pale orange (according to label data), pubescent, 4.5-5.5 mm long, the tubes ca 2 mm long, the lobes ca 0.5 mm long, pubescent. Anthers brown. Achenes 2.5-3.5 mm long, appressed hispid on both faces and along the margins, the wings very narrow (0.1-0.2 mm) or seemingly absent; pappus of 2, readily deciduous, ciliate awns, 2-3 mm long.

TYPE: MEXICO. GUERRERO: Distrito Mina, Las Lumbreras, understory in pine forest, 2050 m, 3 Jan 1938, Ynes Mexia 9069 (holotype LL; isotypes LL, US).

Additional Specimens Examined: MEXICO. GUERRERO: Tlacotepec, 66.6 mi NE Atoyac, 2580 m, 19 Dec 1984, Cowan 4972 (MEXU, TEX); ca 10 km W Camotla, 2500 m, 1 Dec 1963, Feddema 2810 (TEX); Galeana, Teotepec, 330 m, 25 Dec 1937, Hinton et al. 11126 (GH, LL, US). MEXICO STATE: San Jose Xoconusco, 9 Feb 1978, Calvert 1032 (LL); Los Macheros, 19 Feb 1978, Calvert 1045 (LL). MICHOACAN: 6-7 mi N of San Pedro Aguaro, 21 Mar 1949, McVaugh 9981 (LL, US). OAXACA: 29 mi SW Tlaxiaco, 26 Oct 1965, 8000 ft, Cronquist & Sousa 10415 (GH, TEX).

Verbesina mexiae is obviously closely related to the widespread V. hypoglauca Sch.-Bip. ex Klatt of eastern Mexico but

can be consistently recognized by its brown anthers and pistillate rays. In addition the involucre of V. hypoglauca is much looser, the outer series being often quite bract-like and longer than the inner series.

Verbesina hypoglauca is distributed from Nuevo Leon, Mexico, to Guatemala. Blake (1961) in his treatment of the Asteraceae for the Trees and Shrubs of Mexico, also recognized V. intermissa Blake (a nomina nova for Coreopsis liebmanni Sch.-Bip. ex Klatt 1887; not Verbesina liebmanni Sch.-Bip. ex Klatt 1887) which he positionated next to V. hypoglauca (as species 17 and 18). My examination of the phototype (GH) indicates that V. intermissa is a synonym of V. hypoglauca.

The species is named for Ynes Mexia who collected the types within a fortnight or so of its first collector, G. B. Hinton (cited above). Both collectors worked in the Mina District of Guerrero at about the same time and both are rightly honored for their collecting zeal in remote regions at a time when travel was difficult.

VERBESINA NAYARITENSIS B. L. Turner sp. nov., Fig. 1.

V. serratae affinis sed foliis fere ellipticis, vestimento hispido, et capitulis eradiatis flosculis 30-50 differt.

Suffruticose herb or shrub to 1 m high. Stems terete, pale green, densely rough-hispid throughout. Leaves pale green, opposite, ovate to elliptical, 4-8 cm long, 2-4 cm wide; sessile or nearly so, moderately hispid above and below, pinnately veined, the margins denticulate to nearly entire. Heads eradiate, 40-50 in apically clustered, rounded, glomerules just barely exceeding the leaves. Involucre hemispheric, 2-3 seriate; bracts lanceolate, ca 30, subequal, the outer series ca 4 mm long, the inner series ca 6 mm long, appressed pubescent, the apices acute. Disk florets 30-50, yellow; corollas ca 4.5 mm long, pubescent, the throat ca 1 mm long, the lobes ca 0.5 mm long. Anthers brown, ca 2 mm long. Achenes ca 5 mm long, the body pubescent, obovate, ca 4 mm long, ca 1.5 mm wide, bounded by broad scarious wings, 1.0-1.5 mm wide, near the apex; pappus of 2 hispid awns, 1-2 mm long.

TYPE: MEXICO. NAYARIT: Mpio. de Huajcori, 2 km del Rancho de Los Sauces, 8 Nov 1985, I. Solis 560 (holotype TEX; isotypes to be distributed).

In McVaugh (1984), because of its eradiate heads, this species will key to V. curatella McVauth, which is a plant with much larger tapering leaves (12-20 cm long, 5-8 cm wide). It is possible that V. nayaritensis is an aberrant discoid individual of an otherwise rayed taxon, or perhaps the rays have fallen from the late-flowering specimen at my disposal. If so, it would more-or-less

key to *V. serrata*, a very different species with coarsely veined leaves, soft vestiture and few-flowered heads.

VERBESINA NEOTENORIENSIS B. L. Turner, sp. nov.

V. oreopolae affinis sed capigulis grandioribus plerumque solitariis in pedunculis elongatis differt.

Shrubs 1-2 m tall. Stems unwinged, tan to grey, moderately short pubescent, decidedly woody below. Leaves alternate, 4-7 cm long, 0.8-2.0 cm wide, softly puberulent on both surfaces; petioles 2-5 mm long; blades ovate, tapering onto the petioles, markedly pinnately veined below, the margins irregularly denticulate. Heads 1 or 2, terminal on peduncles 2-8 cm long. Involucre hemispheric, subimbricate, 3-4 seriate, 5-6 mm high, 10-12 mm wide; bracts green, linear-oblongate to somewhat spatulate, 3-6 mm long, 2-3 nerved. Receptacle hemispheric, ca 3 mm high, ca 4 mm across; phyllaries glabrous, the apices acute, yellowish, erect or nearly so. Ray florets 13-23, pistillate, fertile; ligules yellow, 3-5 mm long, 1-2 mm wide. Disk florets numerous (90-150); corollas yellow 3-4 mm long, glabrous, the tubes ca 0.5 mm long, the throats ca 2 mm long. Anthers brown. Achene body 2.5-3.5 mm long, bordered by prominent thick wings 0.3-1.0 mm wide; pappus of 2, readily deciduous awns 2-3 mm long.

TYPE: MEXICO. PUEBLA: 16 mi SW of Tehuacan, ca 5200 ft, 23 Oct 1965, Cronquist & Sousa 10389 (holotype TEX; isotypes GH, MEXU, NY, US).

Additional Specimens Examined: MEXICO. PUEBLA: San Juan de la Raya, ca 20-24 mi SW of Tehuacan, 5600 ft, "Arid Thorn Forest over limestone hills", 3 Aug 1963, Gentry et al. 20232 (US); 8 mi NE of border with Oaxaca along highway 125, 7 Oct 1984, Sundberg & Lavin 3054 (MEXU, TEX).

The types were distributed under the name *Verbesina* cf. *oreopola* Rob. & Greenm., a superficially similar taxon of San Luis Potosí and Hidalgo which has more numerous heads on much shorter peduncles and mostly linear-lanceolate leaves.

I have coined the name *neotenoriensis* to atone for my careless erection of *V. tenoriensis* B. Turner (1986) which, after examination of appropriate types, turns out to be an outright synonym of the poorly collected *V. petrophylla* Brandg., a species also collected from the region of Tehuacan, Puebla. The latter has much longer ray ligules, shortly pedunculate, albeit single, heads, and nearly oval, harshly hispid leaves.

VERBESINA VIRGATA var. OREOPOLA (Rob. & Greenm.) B. Turner, comb. nov.

Based upon Verbesina oreopola Rob. & Greenm., Proc. Amer. Acad. Arts 34: 550. 1899.

Type material from GH was examined. The authors cite two collections, Schaffner 344 and Parry & Palmer 457. Both were annotated by Robinson as "n. sp". I have selected the Schaffner collection as lectotype since it appears to be composed of material from a single plant and, in general, fits the published description. The Parry & Palmer collection, however, appears to be mixed, one of the sprigs much resembling that of the Schaffner collection, while the other has much larger leaves with more auriculate blades and the heads have nearly black involucral bracts (as opposed to the greenish-yellow bracts of the lectotype). The broader, more auriculate leaves approach those found in the var. virgata, otherwise the collection is typical of what I recognize as var. oreopola.

Verbesina virgata var. oreopola grades southward (especially in Hidalgo) into the var. virgata which can be recognized by its usually winged stems or, less often, auriculate petioles and less pubescent blades. Blake (1961) recognized both taxa (as numbers 26 and 32 in his list of species) but these are separated in his key by the presence of winged-stems in V. virgata and their absence in V. oreopola. As noted in the discussion of V. angustifolia (below), both winged and/or unwinged stems may occur in many Verbesina species, although in some species one of the two character states may be fixed.

VERBESINA ANGUSTIFOLIA (Benth.) Blake.

McVaugh (1984) while recognizing this taxon, also recognized V. cinerascens Rob. & Greenm. He noted, however, that the latter "might equally well be regarded as a local population of V. angustifolia". The only distinction between the two (as noted by McVaugh in his key to species) is the wingless stems of V. cinerascens vs. the winged stem of V. angustifolia. The latter taxon, while mostly possessing wings, or partially winged, stems, often is totally wingless. Thus the holotype of V. cinerascens (Pringle 1806, GH!) is lacking wings while nearly identical, but wingless, specimens from near the type locality (e.g., Pringle 11602) and elsewhere possess winged stems. A similar phenomenon holds in a number of so-called winged-stemmed species of Verbesina: wingless branches often occur on secondary shoots and sometimes on those of the primary.

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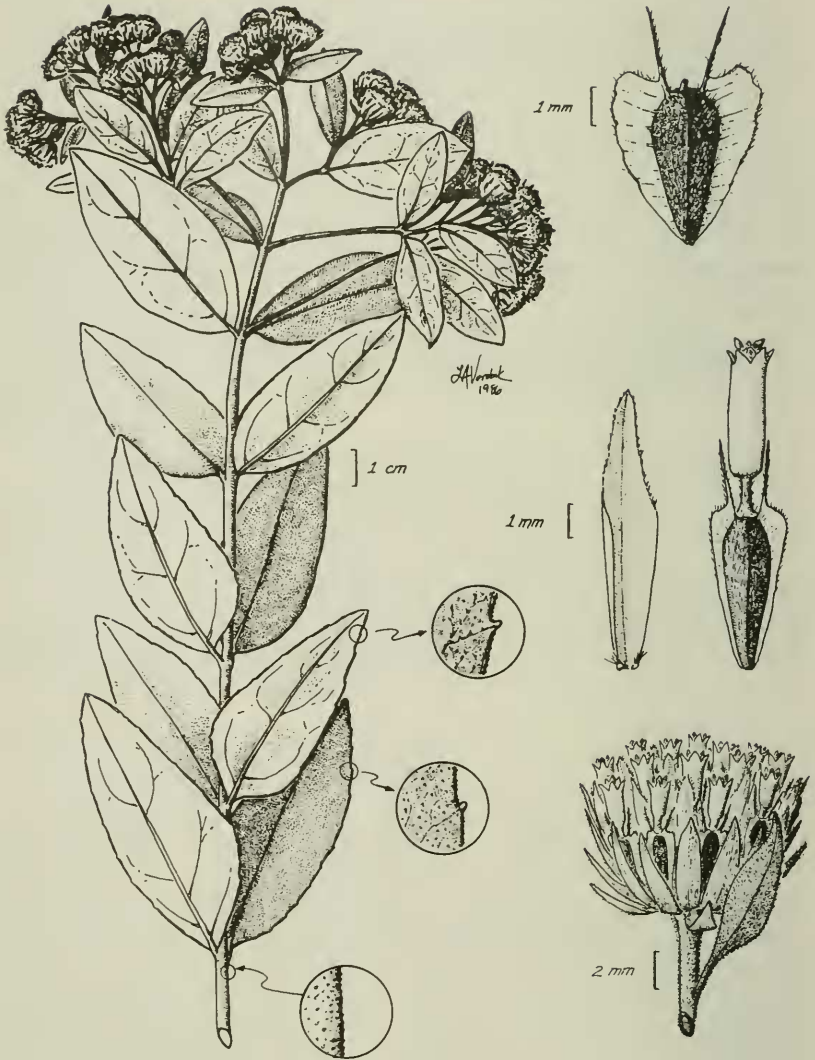


Fig 1. *Verbesina nayaritensis*, from holotype.